



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,363	06/01/2000	Frederick J. Lalonde	1193ROUS02U	5071

7590 02/08/2005

Aprilia U Diaconescu  
c/o Nortel Networks Corporation  
Intellectual Property Law Group  
P O Box 3511 Station C  
Ottawa Ontario, K1Y 4H7  
CANADA

EXAMINER

PAYNE, DAVID C

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/584,363

Applicant(s)

LALONDE ET AL.

Examiner

David C. Payne

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-7, 9-22, 27 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-7, 9-22, 27 and 29-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 19 August 2004 have been fully considered but they are not persuasive.
2. Both Laor and Gloeckner has disclosed MEMs systems for single optical signals. In addition, Gloeckner disclosed an embodiment shown in Figure 18 where individual signals in a WDM system might be switched. Clearly, Gloeckner envisaged a system of MEMS devices used in a WDM system as evidenced. Furthermore, it is clear that the same MEMs device in Laor would be advantages to switching in WDM systems if a demultiplexer and control of the type used in Gloeckner were employed. Both WDM systems and demultiplexers are notoriously well known in the art.
3. The prior art as shown in Laor teaches both ingress and egress areas where signals flow into and out of the switch. An 'area' as the applicant has used it in the claim does not further limit the claim and certainly does distinguish above the prior art. By definition a switching device must have an ingress and egress area where signals arrive and depart the device in order to be functional. Again, this logic applies to the applicant's arguments regarding optical pathways and the relationship between the elements.
4. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-7, 9-22, 27 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor et al. US 6,466,711 B1 (Laor) in view of Gloeckner et al. US 6,445,841 (Gloeckner).
- re claim 3, 14, and 22 Laor disclosed,
- A photonic switch (Figures 1 or 4) for a network comprising:
- a plurality of input ports (12 of Figure 1) and a plurality of output ports (14 of Figure 1);
- a switch block (20 or 30 of Figure 1) for directing said light along an optical path from an assigned ingress area (22) to an associated egress area (32) selected from a plurality of egress areas (30);
- wherein said switching block comprises a switch fabric for cross-connecting said light from an input signal (51) to an output signal (52), and
- wherein said switch fabric comprises row-column input matrix (e.g., col./line: 4/45-55, 6/15-30) of switching elements and an row-column output matrix wherein adaptable paths transit said switch fabric such that an input optical switching element of said input matrix redirects said wavelength away from the plane (20) of said input matrix to an output optical switching element of said output matrix (30).

Art Unit: 2633

Laor does not disclose

an optical demultiplexer for separating a wavelength from input signal received on an input port.

a control unit for selecting an associated egress area and configuring said switch fabric to direct said wavelength along an adaptable path between said assigned ingress area and said associated egress area,

Gloeckner

Gloeckner disclosed a control unit (Figure 18 #1774) for control of switching units in an optical switch and a demultiplexer (Figure 18 #1751) for separating wavelengths. It would have been obvious to one of ordinary skill in the art at the time of invention to apply the Gloeckner control unit and demultiplexer to the Laor apparatus for the benefit of being able to redirect multi-wavelength signals from input ports to output ports.

Regarding claim 4, the modified invention of Laor and Gloeckner disclosed a system wherein said switching elements have a minimum of four degrees of freedom of orientation (see Gloeckner, Figure 15 #1550).

Regarding claim 5, the modified invention of Laor and Gloeckner disclosed wherein said switching elements are 3-D MEMs mirrors (see Laor, col./line: 8/5-10).

Regarding claims 6-7, and 9-11, Laor and Gloeckner disclosed the predetermined positions of the demultiplexer input and outputs as claimed (Gloeckner, Figure 17).

Regarding claims 12 and 13, Laor and Gloeckner disclosed where the number of input port I is equal to the number of output ports I' (Laor Figure 1).

Art Unit: 2633

Regarding claims 15-19, 27, and 29 Laor and Gloeckner disclosed add and drop ports which is considered equivalent to input and output ports (Laor Figure 1).

Regarding claims 20 and 21, Laor does not disclose a connectivity map. However, it would have been obvious to one of ordinary skill in the art at the time of invention that the configuration control module disclosed in Gloeckner (col./line: 14/55-65) would need to maintain a configuration map in order to 'map' wavelengths from input ports to output ports.

Regarding claims 30 and 31 Laor and Gloeckner disclosed where input and output matrices are in different planes substantially parallel (Laor Figure 1).

Regarding claim, 32 Laor and Gloeckner disclosed where input and output matrices and in the same plane (Laor, 32 of Figure 8) with a directing means (Laor, 324 of Figure 8) in the path of light between input and output matrices.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until

Art Unit: 2633

after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

  
**M. R. SEDIGHIAN**  
**PRIMARY EXAMINER**